Laboratory Environment Safety and Health Committee

MINUTES OF MEETING 06-01

January 12, 2006

Final

Committee Members Present	**Committee Members Absent**
N. Bernholc	**R. Costa**
R. Beuhler	**R. Gill**
T. Ginsberg	
W. Glenn	
W. Gunther	
H. Kahnhauser	
R. Lee	
E. Lessard	
R. Travis (Secretary)**	

(non-voting)**

Visitors	
A. Ackerman	**N. Foster**
D. Bauer	**N. Gmür**
R. Biscardi	**R. Heese**
J. Bullis	**S. Hoey**
W.R. Casey	**S. Hulbert**
	S. Buda

Agenda:
1. NSLS Safety Assessment Document and Accelerator Safety Envelope Review

Minutes of Meeting: Appended on pages 2 through 4.

ESH COMMITTEE MINUTES APPROVED:

Signature on File	
E. Lessard **Date**	**J. Tarpinian** **Date**
LESHC Chairperson	**ESH&Q ALD**

Chairperson E. Lessard called the first meeting in 2006 of the Laboratory Environmental Safety and Health Committee (LESHC) to order on January 12, 2006 at 3:06 p.m.

1. **NSLS Safety Assessment Document (SAD) and Accelerator Safety Envelope (ASE) Review:**

1.1. Chairperson E. Lessard invited R. Casey and N. Gmür of the National Synchrotron Light Source (NSLS) to present the December 2, 2005 Revisions of the NSLS Safety Assessment Document and the Accelerator Safety Envelope to the Committee. (The presentation, the review material that was transmitted to the Committee and these Minutes are posted on the LESHC website: http://www.rhichome.bnl.gov/AGS/Accel/SND/laboratory_environemnt,_safety_and_health_committee.htm.)

1.2. Mr. Casey, Mr. Gmür and other attendees made the following points during the course of the presentation and in response to specific Committee questions:

1.3. The NSLS SAD:

1.3.1. The revised NSLS SAD incorporates the four existing NSLS authorization basis documents: NSLS SAR (7/82), Phase II SAR (6/89), Upgraded SAD (3/96) and a dosimetry USI (9/03), into a single document. The content and format of the revised SAD conforms to the guidance in the Accelerator Safety Subject Area.

1.3.2. The facility and its operation are unchanged from that described in the previous authorization basis documents. No new hazards or Unreviewed Safety Issues were identified during the development of the revised SAD.

1.3.3. Revisions to the content of the SAD were added, primarily to satisfy the Subject Area. These include:

- More descriptive material for the site, facility and systems (Chapter 3).
- A Shielding Policy (3.5.1)
- Maximum energy of the Linac was raised to 150 MeV. The analyses reflect the higher power level that is available.
- New radiation calculations for normal and faulted conditions. (Reviewed and results accepted by RCD.)
- Calculations for soil activation (Appendices 11 and 15) and tritium production in cooling water systems (Appendix 14).
- Air activation analysis and NESHAPS evaluation (in conjunction with EWMS).
- Risk tables for significant hazards added per the Subject Area.
- A Fire Hazards Analysis (Appendix 6).

1.3.4. The 15 Appendices provide supporting detail to the main sections of the SAD.

1.4. The NSLS ASE:

1.4.1. The NSLS Accelerator Safety Envelope was revised in 2001 to reflect the Accelerator Safety Subject Area guidance.

1.4.2. Two administrative controls for radiological postings and dosimetry were deleted from the revised ASE, as they are RCD responsibilities and the Radiological Control Manual is the controlling document.

1.4.3. The maximum electron beam energy of the Linac was revised to 150 MeV to be consistent with the SAD.

1.5. At the conclusion of the formal presentation, a page-by-page review of the SAD (main sections) and the ASE was conducted, with emphasis on the sections that have been revised.

1.6. The Committee offered comments on the SAD, during the presentation and the detailed review, including:

1.6.1. The SAD and ASE are well written. Given the extent of the revisions there are a small amount of Committee comments.

1.6.2. The current versions of the NSLS SAD and ASE are posted on the NSLS website. Superceded revisions of these documents are removed and archived. These older versions are not accessible to NSLS personnel. The Committee suggested these older versions be marked as "Superceded" or something similar.

1.6.3. The status of the three recommendations from the Fire Hazards Analysis (Appendix 6) was discussed. One recommendation (since removed from the FHA) the Highly Sensitive Smoke Detector installation is in process. The remaining recommendations are part of Labwide upgrades and are being pursued by the BNL Fire Protection Engineer (J. Levesque) via the ADS funding process.

1.6.4. A Committee Member asked about the resolution of the X-Ray Ring tunnel egress concern. Instead of making the ring a confined space, equipment was moved to open up the walkways. The Ring now conforms to Life Safety Code egress requirements.

1.6.5. The Committee noted that the NSLS parking lot and roof drains (cooling tower blow down with water treatment chemicals) go to a recharge basin and ultimately to the groundwater. The cooling tower water treatment chemical additions are performed by a vendor under Plant Engineering oversight and controlled/coordinated by the NSLS. EWMS monitors these discharges at the recharge basin. The NSLS ECR (D. Bauer) can provide an EMS Process Assessment with additional information for incorporation into Sections 2.1, 3.2.3.1 and 4.2. **Complete** [1]

1.6.6. Amend the discussion of natural hazards (Sections 3.1.10 and 4.4) to add a brief discussion of hurricanes and the potential for loss of power to the building pumps, facility flooding and possibly, contaminated runoff to the environment.

1.6.7. The NSLS has ventilation fans. They are not on emergency power. (Specific fans have been credited for ODH analyses, but the loss of power

[1] This action was completed prior to the issuance of these minutes.

probability is included in the calculations.) At present, the use of hydrogen at the NSLS is limited to a small (self contained) solid hydrogen target for the LEGS project, so there is presently no need for emergency powered ventilation. The NSLS retains the right to use hydrogen in their experiments. However, the use of additional quantities of hydrogen must comply with the requirements of the NSLS ASE for experiment safety review. In addition, if hydrogen is in liquid form, then it would also have to be reviewed by the Cryogenic Safety Subcommittee of the LESHC.

1.6.8. Section 3.2 - add a discussion about large volume storage of chemicals and oils (e.g., water treatment chemicals, emergency generator fuel oil and klystrons). Discuss Article 12 applicability and inspection requirements.

1.6.9. Add a discussion of the review and approval process of new insertion devices in Section 3.3.4.

1.6.10. The Linac energy increase to 150 MeV was discussed. Safety margins are not significantly affected. The principal hazard is increased radiation, but due to existing shielding the amount is insignificant. This increase at the Linac does not translate into increases in the storage rings.

1.6.11. Provide a discussion in Section 4.12.5 of the configuration control to assure that the beam stops are not moved.

1.7. The NSLS committed to revise the SAD and, submit it for Committee review and approval. The ASE was found acceptable, as presented.

1.8. The following motions were crafted by the Committee:

1.8.1. Motion 1: The Committee concurs that the NSLS SAD (12/2/05 revision) follows the content and format of the Accelerator Safety Subject Area. We recommend approval of the revised Safety Assessment Document, subject to the following condition:

1.8.1.1. Incorporation of the LESHC editorial comments provided at the meeting. (See Sections 1.6 and 1.7 above.)

1.8.1.2. Recommendation for Approval of the Motion was made by H. Kahnhauser.

1.8.1.3. Seconded by W. Glenn.

1.8.1.4. The motion was approved by vote of six in favor, none opposed [2].

1.8.2. Motion 2: The Committee finds that the December 2, 2005 Revision of the NSLS ASE is appropriately based on the SAD safety analyses. We recommend that the Deputy Director for Operations submit this ASE to the DOE for review and approval.

1.8.2.1. Recommendation for Approval of the Motion was made by W. Glenn.

1.8.2.2. Seconded by H. Kahnhauser

1.8.2.3. The motion was approved by vote of six in favor, none opposed [2].

2. The Meeting was adjourned at 5:05 p.m.

[2] The meeting ran late and one Committee member had to leave prior to the voting.

Building 911
P.O. Box 5000
Upton, NY 11973-5000
Phone 631 344-4250
lessard@bnl.gov

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for the U.S. Department of Energy

Date: *February 8, 2006*

To: *M. Bebon, Deputy Director for Operations*

From: *E. Lessard, Chair BNL Environment, Safety and Health Committee*

Subject: *LESHC 06-01, Recommendation for Approval of the NSLS SAD and ASE*

The BNL ES&H Committee has reviewed the NSLS Safety Assessment Document (SAD) dated December 2, 2005 in our meeting of January 12, 2006. As documented in our meeting minutes (attached), the Committee concurs that the NSLS SAD follows the content and format of the Accelerator Safety Subject Area. At that meeting, we recommended approval of the revised SAD, subject to the condition that NSLS incorporate the LESHC editorial comments provided at the meeting.

This condition has been completed to the Committee's satisfaction. The current version of the SAD, incorporating the LESHC comments, is dated February 2, 2006.

The Committee also reviewed the December 2, 2005 revision of the NSLS Accelerator Safety Envelope (ASE). We find that the ASE is based on the SAD safety analyses. The ASE, although unchanged, has been re-dated February 2, 2006 to coincide with the SAD date.

Therefore, we recommend your approval of the NSLS SAD dated February 2, 2006, and we recommend you send the ASE dated February 2, 2006 forward to DOE for approval. Copies of these documents are included with this transmittal to aid in your review. The formal (signoff copy) of the SAD and ASE will be transmitted by NSLS to you shortly.

In accordance with the BNL "Accelerator Safety" Subject Area, DOE approval of the SAD is not required. However, the ASE modifications must be transmitted to the DOE Brookhaven Site Office for their review and approval.

Email copies w/o attachments to:
Committee Members
Meeting Attendees
M. Beckman, S. Dierker, S. Hoey, C. Kao, J. Tarpinian, P. Yerry

Office of the Deputy Director for Operations

BROOKHAVEN
NATIONAL LABORATORY

Building 460
P.O. Box 5000
Upton, NY 11973-5000
Phone 631 344-3434
Fax 631 344-2361
bebon@bnl.gov

Managed by Brookhaven Science Associates
For the U.S. Department of Energy

www.bnl.gov

February 10, 2006

Mr. Michael Holland
Manager, Brookhaven Site Office
U.S. Department of Energy
Building 464
Upton, New York 11973-5000

SUBJECT: Recommendation for Approval of the Revised NSLS Accelerator Safety Envelope

Dear Mr. Holland:

I concur with the Laboratory ESH Committee recommendation and I approve the modification to the National Synchrotron Light Source Accelerator Safety Envelope dated February 2, 2006.

I am submitting this revision to the Brookhaven Site Office for review and approval. Attached are relevant files to assist you.

If you have any questions, please contact Nicholas Gmür at x2490.

Sincerely,

Michael Bebon
Deputy Director for Operations

Attachments:
1. LESHC 06-01, Recommendation for Approval for the NSLS SAD and ASE*
2. National Synchrotron Light Source Accelerator Safety Envelope; February 2, 2006*
3. National Synchrotron Light Source Safety Assessment Document; February 2, 2006*

*Electronic copies are available upon request

cc. without attachments
Mohammad Ali (DOE/BHSO)
W. Robert Casey
Steven Dierker
Nicholas F. Gmür
Chi-Chang Kao
Edward Lessard
Richard Travis